

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: ANDREA MARIA ZAMPONI )  
 )  
 SERIAL NO. TO BE ASSIGNED ) ART UNIT: TO BE ASSIGNED  
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 FILED: HEREWITH ) EXAMINER: TO BE ASSIGNED  
 )  
 FOR: REACTIVE DYE MIXTURES )  
 )

Asst. Commissioner for Patents  
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PRELIMINARY AMENDMENT

Sir:

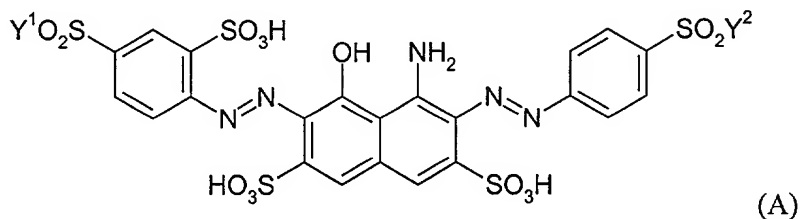
Prior to fee calculation and examination please amend the above-identified  
 application as follows.

In the Claims

Please cancel claims 1-88.

Please add the following new claims.

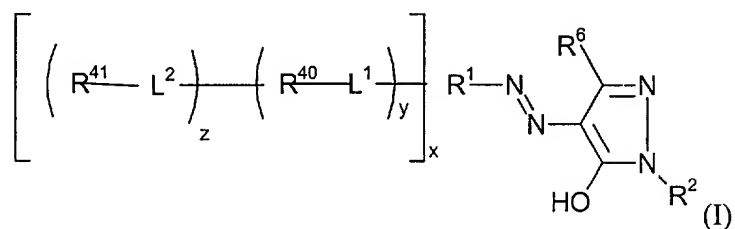
89. A dye mixture comprising, components A and B,  
 wherein component (A) is a reactive dye of the formula (A)



wherein each of  $Y^1$  and  $Y^2$ , independently, is a vinyl group or a group of the formula - $CH_2CH_2Q$  in which Q is a leaving group removable under alkaline conditions to provide a vinyl group; and,

component (B) is at least one reactive dye selected from

(I) a monoazopyrazole dye of the formula



wherein:  $R^1$  is an aryl group selected from phenyl and naphthyl groups optionally having at least one substituent thereon, the substituents, or each substituent independently, is a sulphonic acid group and a salt thereof, a  $C_{1-4}$  alkyl group, a  $C_{1-4}$ alkoxy group, a hydroxy group, a carboxyl group, a chlorine atom, a vinyl sulphonyl group or a group  $SO_2CH_2CH_2Q^1$  in which  $Q^1$  is a leaving group removable under alkaline conditions to provide a vinyl sulphonyl group;

$R^2$  is a phenyl or naphthyl group, optionally having at least one substituent thereon, the substituent, or each substituent, independently, is a sulphonic acid group and a salt thereof, a  $C_{1-4}$ alkyl group, a  $C_{1-4}$ alkoxy group, a hydroxy group, a chlorine atom, a vinyl sulphonyl group, or a group  $SO_2CH_2CH_2Q^2$  in which  $Q^2$  is a leaving group removable under alkaline conditions to provide a vinyl sulphonyl group, a group Het and a group  $L^5$ -Het, wherein Het is an optionally substituted aromatic heterocyclic reactive or non-reactive group or a reactive or non-reactive group having an aliphatic chain and  $L^5$  is as defined below; and

$R^6$  is a methyl group, an amide group or a carboxyl group or a salt thereof;

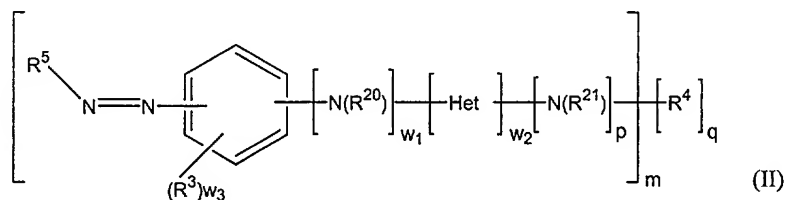
each of  $R^{40}$  and  $R^{41}$ , independently, is an aryl group selected from phenyl and naphthyl groups, each of which, independently, is optionally substituted by a vinylsulphonyl group or a group  $SO_2CH_2CH_2Q^1$  in which  $Q^1$  is a leaving group removable under alkaline conditions to provide a vinylsulphonyl group; or the group Het, wherein Het is as defined above;

at least one of  $R^1$ ,  $R^2$ ,  $R^{40}$  and  $R^{41}$  being, or having thereon at least one substituent which is, reactive;

each of  $L^1$ ,  $L^2$  and  $L^5$  independently is a linking group selected from  $N(R^{20})$ ,  $C(=O)$ ;  $C(=O)-O$ ;  $S(=O)_2$ ;  $S(=O)-NH$ ;  $C(=O)-NH$ ; and  $NHC(=O)NH$ ; and ), wherein  $R^{20}$  is hydrogen or  $C_{1-4}$  alkyl;

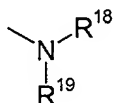
each of x, y and z, independently, is zero or 1; and, when the group  $R^1$  is substituted by a hydroxy group ortho to the azo group, a metallized derivative thereof;

(II) a monoazo or disazo dye of the formula



wherein: Het is an optionally substituted aromatic heterocyclic reactive or non-reactive group or a reactive or non-reactive group having an aliphatic chain;

$R^3$  or each  $R^3$ , independently, is a chlorine atom, a methyl group, a methoxy group, a sulphonic acid group or a salt thereof, or is an amino group of the formula



in which each of  $R^{18}$  and  $R^{19}$ , independently, is hydrogen, chloro, methyl, ( $C_{1-4}$  alkyl)carbonyl, aminocarbonyl, vinylsulphonyl or a group  $SO_2CH_2CH_2Q^1$ , in which  $Q^1$  is as defined above;

$R^4$ , or each  $R^4$  independently, is hydrogen, a sulphonic acid group or a salt thereof, a  $C_{1-8}$  alkyl group, a  $C_{1-4}$  alkoxy group, a vinyl sulphonyl group or a group  $SO_2CH_2CH_2Q^2$  in which  $Q^2$  is a leaving group removable under alkaline conditions to provide a vinyl sulphonyl group, which  $C_{1-4}$  alkyl group or  $C_{1-4}$  alkyl moiety of the  $C_{1-4}$  alkoxy group is optionally interrupted by an oxygen atom to provide an ether group and is optionally substituted by a vinyl sulphonyl group or a group  $SO_2CH_2CH_2Q^2$ , in which  $Q^2$  is as defined above; or  $R^4$  or when  $q$  is 2, each  $R^4$  independently is a phenyl group optionally substituted by at least one sulphonic acid group or a salt thereof or at least one group Het, wherein Het is as defined above; or  $R^4$  is a group Het, wherein Het is as defined above;

$R^5$  is an aryl group selected from phenyl and naphthyl groups each optionally substituted by at least one sulphonic acid group or a salt thereof or at least one group Het, as defined above;

$R^{20}$  is a hydrogen atom or a  $C_{1-4}$  alkyl group;

$R^{21}$  is a hydrogen atom, a  $C_{1-4}$  alkyl group, a sulphonic acid- $C_{1-4}$  alkyl group, a chloroalkylsulphonyl- $C_{1-4}$  alkyl group or a group Het, where Het is as defined above;

m is 1 or 2;

p is zero, 1 or 2;

q is zero, 1 or 2;

each of  $w_1$  and  $w_2$  is zero or 1; and

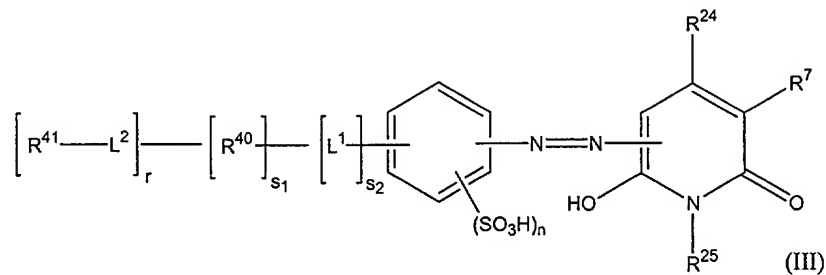
$w_3$  is 1, 2 or 3; and

when p is zero, q is zero;

at least one of  $R^4$ ,  $R^5$ ,  $R^{18}$ ,  $R^{19}$ ,  $R^{21}$  and Het being, or having thereon at least

one substituent which is, reactive;

(III) a monoazopyridone dye of the formula



wherein: each of  $R^{40}$ ,  $R^{41}$ ,  $L^1$  and  $L^2$  is as defined above;

$R^7$  is optionally present and is a cyano group or the group -  $\text{CH}_2\text{SO}_3\text{H}$  or the group -  $\text{C}(=\text{O})\text{NH}_2$ ;

each of  $R^{24}$  and  $R^{25}$ , independently, is a hydrogen atom, a  $\text{C}_{1-4}$  alkyl group, a sulpho- $\text{C}_{1-4}$  alkyl group, or a carboxyl group;

n is 1 or 2;

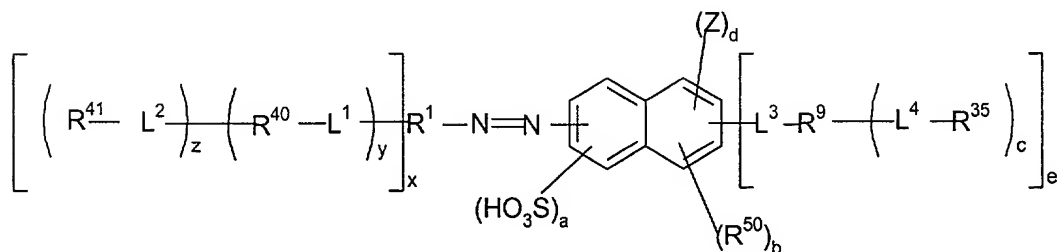
r is zero or 1; and

each of  $s_1$  and  $s_2$  is zero or 1; and when  $R^{40}$  is a phenyl or naphthyl group  $s_2$  is

1;

at least one of  $R^{40}$  and  $R^{41}$  being, or having thereon at least one substituent which is, reactive;

(IV) a monoazonaphthyl dye of the formula



(IV)

wherein: each of  $R^1$ ,  $R^{40}$ ,  $R^{41}$ ,  $L^1$ ,  $L^2$ ,  $x$ ,  $y$  and  $z$  is as defined above;

$R^9$  is  $CH_3(C=O)-$ , Het (as defined above) or an aryl group selected from phenyl and naphthyl, which Het or aryl group is optionally substituted by at least one substituent, the or each substituent, independently, being selected from a sulphonic acid group and a salt thereof, a  $C_{1-4}$  alkyl group, a  $C_{1-4}$  alkoxy group, a hydroxy group, an amino group optionally substituted by at least one methyl or sulphato group, a vinyl sulphonyl group and a group  $SO_2CH_2CH_2Q^1$  in which  $Q^1$  is as defined above;

$R^{35}$  is a  $C_{1-4}$  alkyl or  $C_{2-4}$  alkenyl group, which  $C_{1-4}$  alkyl or  $C_{2-4}$  alkenyl group is optionally substituted by at least one halogen atom, a sulphonic acid group or salt thereof, a chloroalkylsulphonyl group, a vinylsulphonyl group or  $-SO_2CH_2CH_2Q^1$ , where  $Q^1$  is as defined above and which  $C_{1-4}$  alkyl or  $C_{2-4}$  alkenyl group optionally additionally contains at least one oxygen or sulphur atom in the chain thereof; the group Het is defined above or an aryl group selected from phenyl and naphthyl, which Het or aryl group is optionally

substituted by at least one substituent, the substituent or each substituent independently, being selected from the group consisting of a sulphonic acid group and a salt thereof, a C<sub>1-4</sub> alkyl group, a C<sub>1-4</sub> alkoxy group, a halogen atom, a hydroxy group, an amino group optionally substituted by at least one methyl or sulphato group, a vinylsulphonyl group, a vinylsulphonyloxyethyl group and a group SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Q<sup>1</sup> in which Q<sup>1</sup> is as defined above;

R<sup>50</sup> is a vinylsulphonyl group or a group SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Q<sup>1</sup> in which Q<sup>1</sup> is as defined above;

at least one of R<sup>1</sup>, R<sup>9</sup>, R<sup>35</sup>, R<sup>40</sup>, R<sup>41</sup> and R<sup>50</sup> is, or has thereon at least one substituent which is, reactive;

L<sup>3</sup> is a linking group which is N(R<sup>20</sup>); CO; COO; NHCO; NHCONH; SO<sub>2</sub>NH or SO<sub>2</sub>; and R<sup>20</sup> is as defined above;

L<sup>4</sup> is a linking group which is N(R<sup>21</sup>), in which CO, COO, NHCO, NHCONH, SO<sub>2</sub>NH or SO<sub>2</sub>; and R<sup>21</sup> is as defined above;

Z is hydroxy, amino or methylamino;

a is zero or 1-4;

b is zero or 1-3;

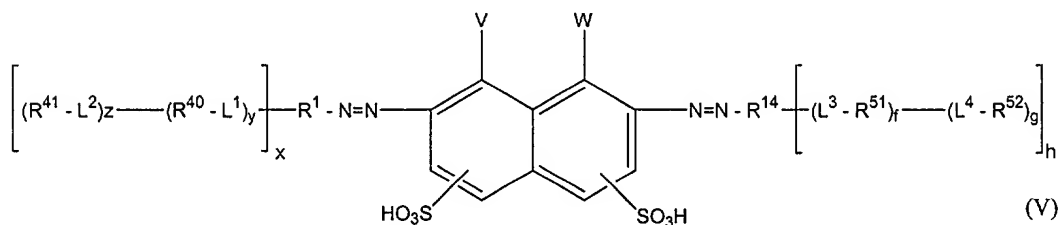
c is zero or 1;

d is zero, 1 or 2;

e is zero or 1; and

when each of  $R^1$  and Z provides a hydroxyl group ortho to the azo group, a metallized derivative thereof;

(V) a disazoaminonaphthyl dye of the formula



wherein: each of  $R^1$ ,  $R^{40}$ ,  $R^{41}$ ,  $L^1$ ,  $L^2$ , x, y and z is as defined above;

each of V and W, independently, is  $\text{NH}_2$  or  $\text{OH}$ ;

$R^{14}$  is an aryl group selected from phenyl and naphthyl groups optionally having at least one substituent thereon, the substituents, or each substituent independently, being selected from a sulphonic acid group and a salt thereof, a  $\text{C}_{1-4}$  alkyl group, a  $\text{C}_{1-4}$  alkoxy group, a hydroxy group, a vinyl sulphonyl group, a group  $\text{SO}_2\text{CH}_2\text{CH}_2\text{Q}^1$  in which  $\text{Q}^1$  is a leaving group removable under alkaline conditions to provide a vinyl sulphonyl group;

each of  $R^{51}$  and  $R^{52}$  independently is an aryl group selected from phenyl and naphthyl groups each of which is optionally substituted by a vinyl sulphonyl group, a group  $\text{SO}_2\text{CH}_2\text{CH}_2\text{Q}^1$  in which  $\text{Q}^1$  is a leaving group removable under alkaline conditions to



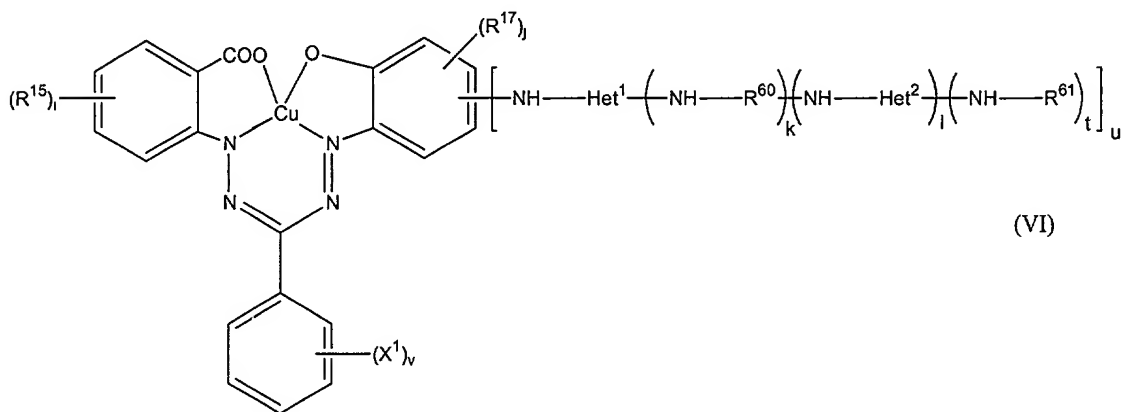
provide a vinyl sulphonyl group, or the group Het<sup>3</sup>, where Het<sup>3</sup> is an optionally substituted aromatic heterocyclic reactive group or a reactive group having an aliphatic chain;

each of L<sup>3</sup> and L<sup>4</sup>, independently, is a linking group selected from the group consisting of N(R<sup>20</sup>); C<sub>1-4</sub> alkyl; C(=O); C(=O)-O; S(=O)<sub>2</sub>; S(=O)-NH; C(=O)-NH; and NHC(=O)NH; in which R<sup>20</sup> is hydrogen;

each of f, g and h, independently is zero or 1; and

at least one of R<sup>14</sup>, R<sup>40</sup>, R<sup>41</sup>, R<sup>51</sup> and R<sup>52</sup> is, or has thereon at least one substituent which is, reactive;

(VI) a formazan dye of the formula



wherein: each of R<sup>16</sup> and R<sup>17</sup> independently of one another, each R<sup>16</sup> independently of one another and each R<sup>17</sup> independently of one another, is a sulphonic acid group or a salt thereof, a vinyl sulphonyl group or a group SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Q<sup>1</sup> in which Q<sup>1</sup> is a leaving group removable under alkaline conditions to provide a vinyl sulphonyl group;

each of Het<sup>1</sup> and Het<sup>2</sup>, independently, is an optionally substituted aromatic heterocyclic reactive or non-reactive group or a reactive or non-reactive group having an aliphatic chain; and

each of R<sup>60</sup> and R<sup>61</sup>, independently, is an aryl group selected from phenyl and naphthyl groups each of which is optionally substituted by a sulphonic acid group or a salt thereof, a vinylsulphonyl group or a group SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Q<sup>1</sup> in which Q<sup>1</sup> is as defined above;

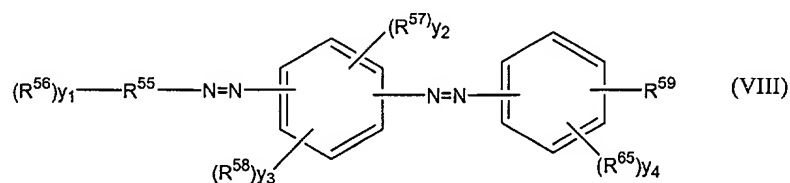
X<sup>1</sup> is a sulphonic acid group or a salt thereof or halogen;

each of i, j and v, independently, is zero, 1 or 2; and

each of k, l, t and u, independently, is zero or 1; and

at least one of R<sup>16</sup>, R<sup>17</sup>, R<sup>50</sup>, R<sup>51</sup>, Het<sup>1</sup> and Het<sup>2</sup> is, or has thereon at least one substituent which is, reactive;

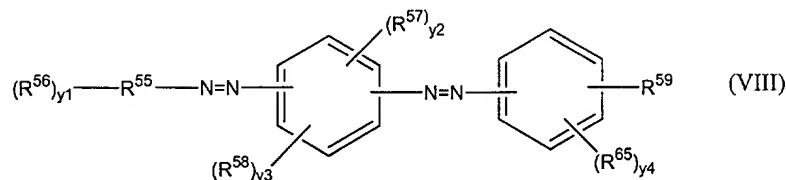
(VII) a dye of the formula



wherein: each of R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>40</sup>, L<sup>1</sup>, Het, x, p, q, w<sub>1</sub>, w<sub>2</sub> and w<sub>3</sub> is as defined above; and

at least one of R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>21</sup>, R<sup>40</sup> and Het is, or has thereon at least one substituent which is, reactive;

(VIII) a disazo dye of the formula



wherein  $R^{55}$  is an aryl group selected from phenyl and naphthyl groups;

$R^{56}$  is a sulphonic acid group or a salt thereof or a reactive group selected from a vinyl sulphonyl group and a group  $SO_2CH_2CH_2Q^1$  in which  $Q^1$  is a leaving group removable under alkaline conditions to provide a vinyl sulphonyl group;

$R^{57}$  is an amino group or a group  $NHR^A$  in which  $R^A$  is a  $C_{1-4}$  alkyl group;

$R^{58}$  is a sulphonic acid group or a salt thereof;

$R^{59}$  is a sulphonic acid group or a salt thereof, a reactive group selected from a vinyl sulphonyl group and a group  $SO_2CH_2CH_2Q^2$  in which  $Q^2$  is a leaving group removable under alkaline conditions to provide a vinyl sulphonyl group; or the group  $R^{59}$  is a group Het or a group  $L^{10}$ -Het, where Het is an optionally substituted aromatic heterocyclic reactive or non-reactive group;

$R^{65}$  is a ureido group or a group  $HNC(=O)R^B$  in which  $R^B$  is a  $C_{1-4}$  alkyl group;

$L^{10}$  is a linking group selected from  $N(R^{20})$ ,  $C(=O)$ ;  $C(=O)-O$ ;  $S(=O)_2$ ;  $S(=O)-NH$ ;  $C(=O)-NH$ ; and  $NHC(=O)NH$  and  $R^{20}$  is hydrogen or  $C_{1-4}$  alkyl;

$y_1$  is zero, 1, 2 or 3;

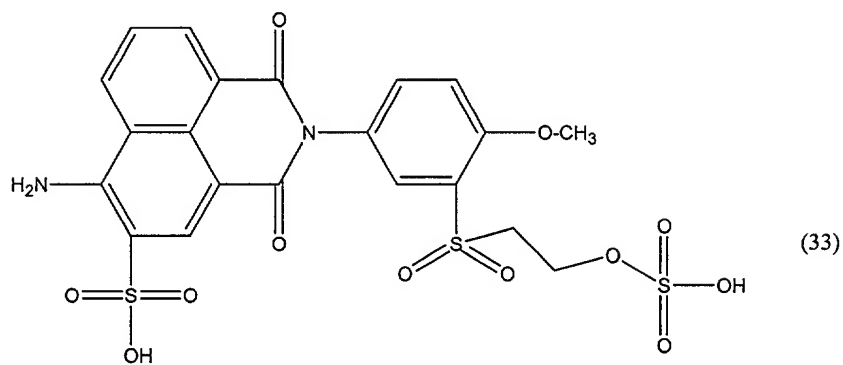
$y_2$  is zero, 1 or 2;

$y_3$  is zero or 1; and

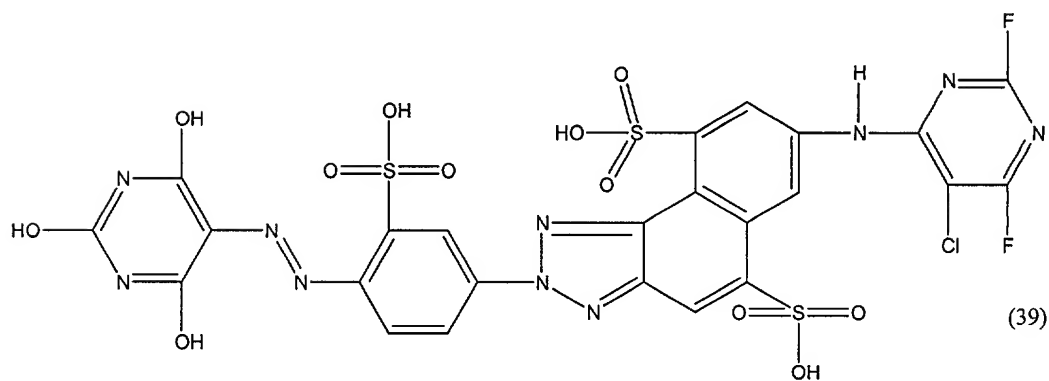
$y_4$  is zero or 1; and

at least one of  $R^{56}$  and  $R^{59}$  is a reactive group;

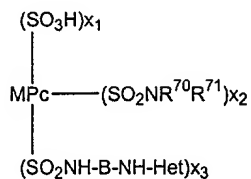
(IX) a dye of the formula



OR

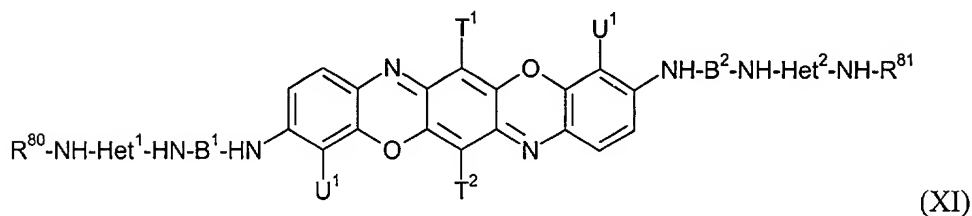


(X) a metal phthalocyanine dye of the formula



wherein: MPc is a metallophthalocyanine chromophore;  
 each of  $\text{R}^{70}$  and  $\text{R}^{71}$ , independently, is hydrogen or  $\text{C}_{1-4}$  alkyl;  
 B is a hydrocarbon bridging group;  
 Het is a reactive heterocyclic group;  
 each of  $x_1$ ,  $x_2$  and  $x_3$  is a respective average value;  
 $x_1 + x_2 + x_3 = 4$ ;  
 $x_1$  is at least 1  
 $x_2$  is zero or 1; and  
 $x_3$  is at least 1; and

(XI) a triphenodioxazine dye of the formula (XI)(or a salt thereof)



wherein: each of  $\text{B}^1$  and  $\text{B}^2$ , independently, is a hydrocarbon bridging group;  
 $\text{U}^1$  is H or  $\text{SO}_3\text{H}$ ; and  
 each of  $\text{T}^1$  and  $\text{T}^2$ , independently, is halo,  $\text{C}_{1-4}$  alkyl, or  $\text{C}_{1-4}$  alkoxy;

each of  $R^{80}$  and  $R^{81}$  is a phenyl group substituted by at least one sulphonic acid group or a salt thereof;

each of  $Het^1$  and  $Het^2$  is as defined above; and

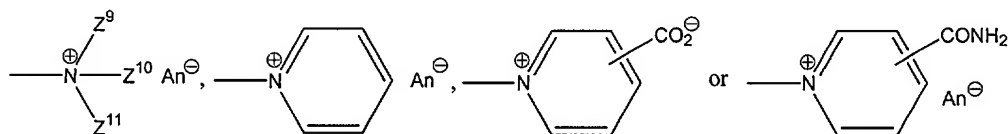
at least one of  $Het^1$  and  $Het^2$  is a reactive group.

90. The dye mixture according to claim 89, wherein, in the dye of the formula (A), at least one of  $Y^1$  and  $Y^2$  is the group

$-CH_2CH_2Q$  and  $Q$  is chlorine, bromine,

$C_{1-4}$ -alkylsulfonyl, phenylsulfonyl,  $OSO_3H$ ,  $SSO_3H$ ,  $OP(O)(OH)_2$ ,

$C_{1-4}$ -alkylsulfonyloxy, phenylsulfonyloxy,  $(C_{1-4}$  alkyl) carbonyloxy,  $(C_{1-4}$  dialkyl) amino or a radical of the formula



where  $Z^9$ ,  $Z^{10}$  and  $Z^{11}$  are identical or different and are each, independently of one another,

$C_{1-4}$  alkyl or benzyl and  $An^\theta$  is in each case one equivalent of an anion.

91. The dye mixture according to claim 90, in which, in the reactive dye of the formula

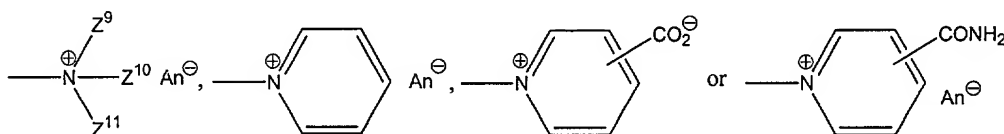
(A), each of  $Y^1$  and  $Y^2$  is the group  $HO_3SOCH_2CH_2$ .

92. The dye mixture according to claim 89, wherein the reactive dye (B) contains a group Het, where Het is an optionally substituted aromatic heterocyclic reactive group derived from a halogen-substituted heterocyclic compound selected from 1,3,5-triazine, quinoxaline, phthalazine, pyrimidine, pyridazine or 2-(C<sub>1-4</sub> alkylsulphonyl) benzothiazole.

93. The dye mixture according to claim 92, wherein the aromatic heterocyclic reactive group is substituted and at least one substituent is a halogen atom.

94. The dye mixture according to claim 92, wherein the reactive dye (B) contains a group Het, wherein Het is a reactive group having an aliphatic chain and is acryloyl, mono-chloroacryloyl, dichloroacryloyl, trichloroacryloyl, mono-bromoacryloyl, di-bromoacryloyl tri-bromoacryloyl, -CO-CCl=CH-COOH, -CO-CH=CCl-COOH, 2-chloropropionyl, 1,2-dichloropropionyl, 1,2-dibromopropionyl, 3-phenylsulfonylpropionyl, 3-methylsulfonylpropionyl, 2-sulfatoethylaminosulfonyl, 2-chloro-2,3,3-trifluorocyclobutylcarbonyl, 2,2,3,3-tetrafluorocyclobutylcarbonyl, 2,2,3,3-tetrafluorocyclobutylsulfonyl, 2-(2,2,3,3-tetrafluorocyclobutyl)acryloyl, 1-alkylsulfonylacryloyl, 2-alkylsulfonylacryloyl, 1-arylsulfonylacryloyl, 2-arylsulfonylacryloyl, or a radical of the formula SO<sub>2</sub>-Y<sup>3</sup>, SO<sub>2</sub>NH-Y<sup>3</sup>, CONH-L<sup>6</sup>-SO<sub>2</sub>-Y<sup>3</sup> or NHCONH-L<sup>6</sup>-SO<sub>2</sub>-Y<sup>3</sup> where L<sup>6</sup> is C<sub>1</sub>-C<sub>4</sub>-alkylene or phenylene and Y<sup>3</sup> is a vinyl group or a group of the formula CH<sub>2</sub>CH<sub>2</sub>Q<sup>3</sup> in which Q<sup>3</sup> is a leaving group removable under alkaline conditions to provide a vinyl group.

95. The dye mixture according to claim 89, wherein the reactive dye (B) has at least one of the groups  $Q^1$  and  $Q^2$  therein and the or each of groups  $Q^1$  and  $Q^2$  independently is selected from chlorine, bromine,  $C_{1-4}$ -alkylsulfonyl, phenylsulfonyl,  $OSO_3H$ ,  $SSO_3H$ ,  $OP(O)(OH)_2$ ,  $C_{1-4}$ -alkylsulfonyloxy, phenylsulfonyloxy,  $(C_{1-4}$  alkyl)carbonyloxy,  $(C_{1-4}$  dialkyl)amino or a radical of the formula



where  $Z^9$ ,  $Z^{10}$  and  $Z^{11}$  are identical or different and are each, independently of one another,  $C_{1-4}$ -alkyl or benzyl and  $An^\ominus$  is in each case one equivalent of an anion.

96. The dye mixture according to claim 89, wherein the reactive dye (B) is a monoazopyrazole dye of the formula (I).

97. The dye mixture according to claim 96, wherein, in the reactive dye (B) of the formula (I), at least one of the group  $[(R^{41}-L^2)_z(R^{40}-L^1)_y]R^1$  and the group  $R^2$  has a group  $-SO_2CH_2SO_2Q^2$  substituted thereon.

98. The dye mixture according to claim 96, wherein, in the reactive dye (B) of the formula (I),  $x$  is zero and the group  $R^1$  is substituted by at least one of a sulphonic acid group and the group  $-SO_2CH_2SO_2Q^1$ .



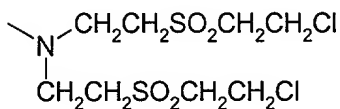
99. The dye mixture according to claim 97, wherein, in the reactive dye (B) of the formula (I), each of x, y and z is 1, each of L<sup>1</sup> and L<sup>2</sup> is NH, R<sup>40</sup> is the group Het, where Het is a triazine ring substituted by a halogen atom and R<sup>41</sup> is an optionally substituted phenyl group.

100. The dye mixture according to claim 96, wherein, in the reactive dye (B) of the formula (I), each of x and z is 1, y is zero, L<sup>2</sup> is NH and R<sup>41</sup> is the group Het, where Het is a difluorochloropyrimidinyl group.

101. The dye mixture according to claim 96, wherein, in the reactive dye (B) of the formula (I), each of x and z is 1, y is zero, L<sup>2</sup> is CONH in which the nitrogen atom is attached to the group R<sup>1</sup> and the carbon to the group R<sup>41</sup> and R<sup>41</sup> is the group Het, where Het is a 2,3-dichloroquinoxaline group.

102. The dye mixture according to claim 96, wherein, in the reactive dye (B) of the formula (I), R<sup>2</sup> is a phenyl or naphthyl group substituted by at least one of a sulphonic acid group and the group -SO<sub>2</sub>CH<sub>2</sub>SO<sub>2</sub>Q<sup>2</sup>.

103. The dye mixture according to claim 96, wherein, in the reactive dye (B) of the formula (I), R<sup>2</sup> is a phenyl or naphthyl group substituted at least by the group NH-Het, wherein Het is a triazine ring substituted by a halogen atom and optionally substituted by the group



104. The dye mixture according to claim 96, wherein, in the reactive dye (B) of the formula (I), the group R<sup>1</sup> is substituted by a hydroxy group ortho to the azo group and the reactive dye (B) is in the form of a copper complex.

105. The dye mixture according to claim 89, wherein the reactive dye (B) is monoazo or disazo dye of the formula (II).

106. The dye mixture according to claim 105, wherein, in the reactive dye (B) of the formula (II), the group R<sup>5</sup> is an aryl group selected from phenyl and naphthyl groups each substituted by at least one sulphonic acid group or a salt thereof or by a group Het, wherein Het is a vinylsulphonyl group or a group SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Q<sup>1</sup>.

107. The dye mixture according to claim 106, wherein, in the reactive dye (B) of the formula (II), m is 1, which dye is a monoazo dye.

108. The dye mixture according to claim 107, wherein, in the reactive dye (B) of the formula (II), each of w<sub>1</sub>, w<sub>2</sub>, p and q is zero, w<sub>3</sub> is at least 2, at least one of the groups R<sup>3</sup> is a sulphonic acid group and the group R<sup>5</sup> is an aryl group selected from phenyl and naphthyl groups each substituted by a vinylsulphonyl group or a group -SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Q<sup>1</sup>.

109. The dye mixture according to claim 107, wherein, in the reactive dye (B) of the formula (II), each of  $w_1$  and  $w_2$  is zero, each of  $p$  and  $q$  is 1,  $R^{21}$  is hydrogen and  $R^4$  is

a) a triazine ring substituted by at least one halogen atom, and optionally additionally substituted by an amino group; or

b) a pyrimidine group substituted by at least one halogen atom and optionally additionally substituted by a methyl group.

110. The dye mixture according to claim 107, wherein, in the reactive dye (B) of the formula (II), each of  $w_1$ ,  $w_2$ ,  $p$  and  $q$  is 1,  $R^{20}$  is hydrogen, Het is a triazine ring substituted by a halogen atom,  $R^{21}$  is hydrogen and  $R^4$  is a phenyl group, a group  $-SO_2CH_2CH_2Q^1$ , a straight or branched  $C_{2-4}$  alkylene chain substituted by a substituent is a hydroxyl group; a sulphonic acid group or salt thereof; a vinylsulphonyl group, a group

$-SO_2CH_2CH_2Q^2$ , or a pyrimidinylamino group in which the pyrimidinyl group is substituted by at least one halogen atom and optionally additionally by a methyl group; and which straight or branched  $C_{2-4}$  alkylene group optionally contains a hetero atom selected from the group consisting of O, S and N(H).

111. The dye mixture according to claim 107, wherein, in the reactive dye (B) of the formula (II), each of  $w_1$  and  $w_2$  is zero, each of  $p$  and  $q$  is 1 and each of  $R^{21}$  and  $R^4$  is the group  $OSO_3H$ .

112. The dye mixture according to claim 107, wherein, in the reactive dye (B) of the formula (II),  $w_1$  is zero,  $w_2$  is 1,  $p$  is 1,  $q$  is 1,  $R^{21}$  is hydrogen,  $R^4$  is a pyrimidinyl group

CC1=CC=C2C(=C1)S(=O)(=O)C3=CC=C(C=C2)N=N3C(=O)O  
OS(=O)(=O)CC1=CC=C(S(=O)(=O)C2=CC=C(NC(=O)N)C=C2N3C=NC(=N3)NC4=CC=C(NC(=O)N)C=C4)C=C1

- 20

straight or branched chain C<sub>2-4</sub> alkylene group optionally containing at least one oxygen atom and substituted by a vinylsulphonyl group or a group -SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Q<sup>1</sup>.

116. A dye mixture according to claim 114, wherein, in the reactive dye (B) of the formula (III), each of r and s<sub>1</sub> is 1, s<sub>2</sub> is zero, L<sup>2</sup> is NH, R<sup>41</sup> is a pyrimidinyl group substituted by at least one halogen atom and optionally additionally substituted by a methyl group and R<sup>40</sup> is a naphtho-(1,2-d)-1,2,3-triazole substituted by at least one sulphonic acid group or salt thereof.

117. A dye mixture according to claim 114, wherein, in the reactive dye (B) of the formula (III), each of r<sub>1</sub>, s<sub>1</sub> and s<sub>2</sub> is 1, L<sup>1</sup> is CONH, in which the carbon atom is attached to the group R<sup>40</sup>, L<sup>2</sup> is NH, R<sup>40</sup> is an optionally substituted phenyl group and R<sup>41</sup> is a pyrimidinyl group substituted by at least one halogen atom and optionally additionally substituted by a methyl group.

118. The dye mixture according to claim 89, wherein the reactive dye (B) is a monoazonaphthyl dye of the formula (IV).

119. The dye mixture according to claim 118, wherein, in the reactive dye (B) of the formula (IV), x is zero, d is 1 and a or b is 1.

120. The dye mixture according to claim 119, wherein e is zero.

121. The dye mixture according to claim 118, wherein, in the reactive dye (B) of the formula, x is 1, y is zero, z is 1,  $L^2$  is NH and  $R^{41}$  is a pyrimidinyl group substituted by at least one halogen atom and optionally additionally substituted by a methyl group.

122. The dye mixture according to claim 118, wherein, in the reactive dye (B) of the formula (IV), x is 1, y is zero, z is 1,  $L^2$  is CONH and with the carbon atom attached to the group  $R^1$  and the nitrogen atom to the group  $R^{41}$  and  $R^{41}$  is a phenyl group substituted by a vinylsulphonyl group or a group  $-SO_2CH_2CH_2Q^1$ .

123. The dye mixture according to claim 118, wherein, in the reactive dye (B) of the formula (IV) each of x, y and z is 1, each of  $L^1$  and  $L^2$  is NH,  $R^{40}$  is a triazine ring substituted by a halogen atom and  $R^{41}$  is an aromatic group selected from phenyl and naphthyl groups each substituted by at least one of a sulphonic acid group or a salt thereof, a vinylsulphonyl group or the group  $-SO_2CH_2CH_2Q^1$ .

124. The dye mixture according to claim 121, wherein e is zero.

125. The dye mixture according to claim 118, wherein, in the reactive dye (B) of the formula (IV), e is 1, c is zero,  $L^3$  is CONH and wherein either the nitrogen or carbon atom thereof is attached to the group  $R^9$  and  $R^9$  is a methyl group.

126. The dye mixture according to claim 118, wherein, in the reactive dye (B) of the formula (IV), e is 1, c is zero,  $L^3$  is CONH and wherein either the nitrogen or carbon atom thereof is attached to the group  $R^9$  and  $R^9$  is a phenyl group optionally substituted by at least one substituent, the or each substituent is methoxy, carboxyethyl, sulphoethyl, carboxyethenyl, 1,2-dibromoalkyl, chloroethylsulphonyl, vinylsulphonyl, a group of the formula  $-SO_2CH_2CH_2Q^1$ , or a 2,3-dichloroquinoxaline group.

127. The dye mixture according to claim 118, wherein, in the reactive dye (B) of the formula (IV), e is 1, c is 1,  $L^3$  is CONH and wherein either the nitrogen or carbon atom thereof is attached to the group  $R^9$ ,  $R^9$  is a phenyl group substituted at least by the group  $L^4-R^{35}$ , wherein  $L^4$  is NH and  $R^{35}$  is a vinyl group optionally substituted by a halogen atom or a pyrimidinyl group substituted by a halogen atom and optionally additionally substituted by a methyl group.

128. The dye mixture according to claim 118, wherein, in the reactive dye (B) of the formula (IV), e is 1, c is zero,  $L^3$  is  $N(R^{20})$ , wherein  $R^{20}$  is as defined in claim 1 and  $R^9$  is a vinylsulphonyl group, a group  $-SO_2CH_2CH_2Q^1$ , or a pyrimidinyl group substituted by a halogen atom and optionally additionally substituted by a methyl group.

129. The dye mixture according to claim 128, wherein, in the group  $N(R^{20})$ , and  $R^{20}$  is a halogen atom or a methyl group.

130. The dye mixture according to claim 118, wherein, in the reactive dye (B) of the formula (IV), e is 1, c is zero,  $L^3$  is  $N(R^{20})$ , and  $R^9$  is a triazine ring substituted by at least one halogen atom.

131. The dye mixture according to claim 130, wherein the triazine ring is substituted by two halogen atoms.

132. The dye mixture according to claim 130, wherein the triazine ring is substituted by one halogen atom and a morpholinyl group.

133. The dye mixture according to claim 118, wherein, in the reactive dye (B) of the formula (IV), e is 1, c is 1,  $L^3$  is  $N(R^{20})$ ,  $L^4$  is the group  $R^{21}$ , and  $R^{35}$  is a phenyl group optionally substituted by a sulphonic acid group or salt thereof, a halogen atom, a vinylsulphonyloxyalkyl group, a vinylsulphonyl group or the group  $-SO_2CH_2CH_2Q^1$ , a  $C_{1-4}$  alkyl group optionally substituted by a vinylsulphonyl group, the group  $-SO_2CH_2CH_2Q^1$ , a sulphonic acid group or a salt thereof or a chloroalkylsulphonyl group, which  $C_{1-4}$  alkyl group optionally additionally contains at least one oxygen or sulphur atom in the chain thereof.

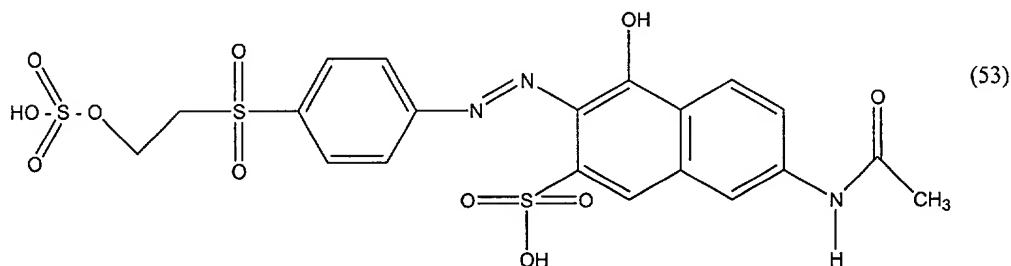
134. The dye mixture according to claim 125, wherein x is zero.

135. The dye mixture according to claim 125, wherein, in the reactive dye (B) of the formula (IV), each of the groups  $R^1$  and the naphthalene nucleus is substituted by a respective



hydroxyl group ortho to the azo group and the reactive dye (B) is in the form of a copper complex thereof.

136. The dye mixture according to claim 118, which contains a dye of the formula (53)



137. The dye mixture according to claim 89, wherein the reactive dye (B) is a disazo dye of the formula (V).

138. The dye mixture according to claim 137, wherein, in the reactive dye (B) of the formula (V), V is amino, W is hydroxy, each of  $R^1$  and  $R^{14}$  is a phenyl group substituted by at least one substituent, the or each substituent independently being a sulphonic acid group or a salt thereof, a vinylsulphonyl group or a group  $SO_2CH_2CH_2Q^1$  and  $R^{14}$  is optionally additionally substituted by at least one methoxy group.

139. The dye mixture according to claim 137, wherein, in the reactive dye (B) of the formula (V), each of x and h is zero.

140. The dye mixture according to claim 138, wherein, in the reactive dye (B) of the formula (V), at least one of x and h is 1.

141. The dye mixture according to claim 140, wherein, each of x and h is 1.

142. The dye mixture according to claim 138, wherein each of x, y and z is 1, each of  $L^1$  and  $L^2$  is NH,  $R^{40}$  is a triazine ring substituted by a halogen atom and  $R^{41}$  is a phenyl group substituted by at least one substituent, the or each substituent independently being a sulphonic acid group or a salt thereof, a vinylsulphonyl group or a group  $SO_2CH_2CH_2Q^1$ .

143. The dye mixture according to claim 142, wherein each of f, g and h is 1, each of  $L^3$  and  $L^4$  is NH,  $R^{51}$  is a triazine ring substituted by a halogen atom and  $R^{52}$  is a phenyl group substituted by at least one substituent the or each substituent independently being selected from a halogen atom, a sulphonic acid group or a salt thereof, a vinylsulphonyl group and a group  $SO_2CH_2CH_2Q^1$ .

144. The dye mixture according to claim 137, wherein, in the reactive dye (B) of the formula (V), V is amino, W is hydroxy, h is zero and  $R^{14}$  is a naphthalene group substituted by at least one sulphonic acid group.

145. The dye mixture according to claim 144, wherein each of x, y and z is 1,  $R^1$  is a phenyl group optionally substituted by a sulphonic acid group or a salt thereof, each of  $L^1$  and  $L^2$  is NH,  $R^{40}$  is a triazine ring substituted by a halogen atom and  $R^{41}$  is a phenyl group

substituted by at least one substituent, the or each substituent independently being a sulphonic acid group or a salt thereof, a vinylsulphonyl group or a group  $\text{SO}_2\text{CH}_2\text{CH}_2\text{Q}^1$ .

146. The dye mixture according to claim 137, wherein, in the reactive dye (B) of the formula (V), V is amino, W is hydroxy, h is 1, f is zero, g is 1,  $\text{L}^4$  is NH and  $\text{R}^{52}$  is the group  $\text{Het}^3$ , where  $\text{Het}^3$  is a substituted aromatic heterocyclic group.

147. The dye mixture according to claim 146, wherein the group  $\text{Het}^3$  is a pyrimidinyl group substituted by at least one halogen atom and optionally additionally substituted by a methyl group.

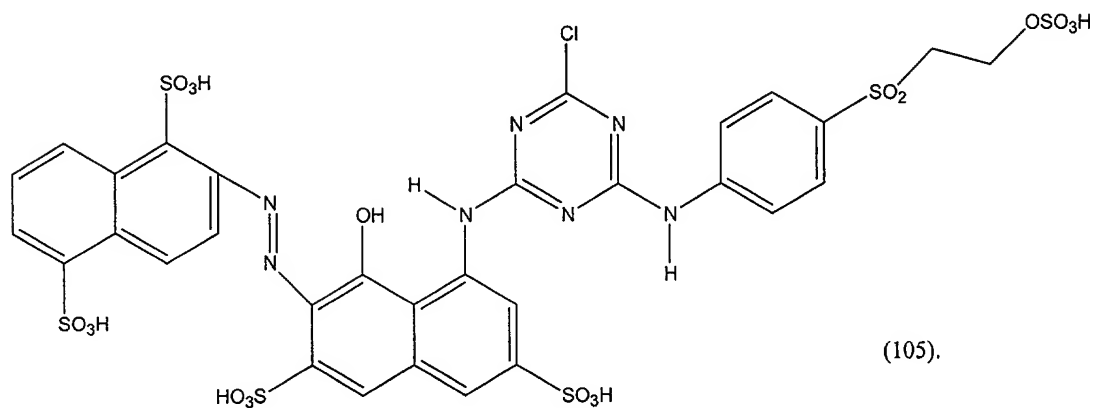
148. The dye mixture according to claim 147, wherein x is zero and  $\text{R}^1$  is a phenyl group substituted by a vinylsulphonyl group or  $\text{SO}_2\text{CH}_2\text{CH}_2\text{Q}^1$ .

149. The dye mixture according to claim 137, wherein, in the reactive dye (B) of the formula (V), V is amino, W is hydroxy, h is 1, f is zero, g is 1,  $\text{L}^4$  is  $\text{NHCO}$ , wherein either the nitrogen or carbon atom thereof is attached to the group  $\text{R}^{14}$ , and  $\text{R}^{52}$  is the group  $\text{Het}^3$ , where  $\text{Het}^3$  is a reactive group having an aliphatic chain.

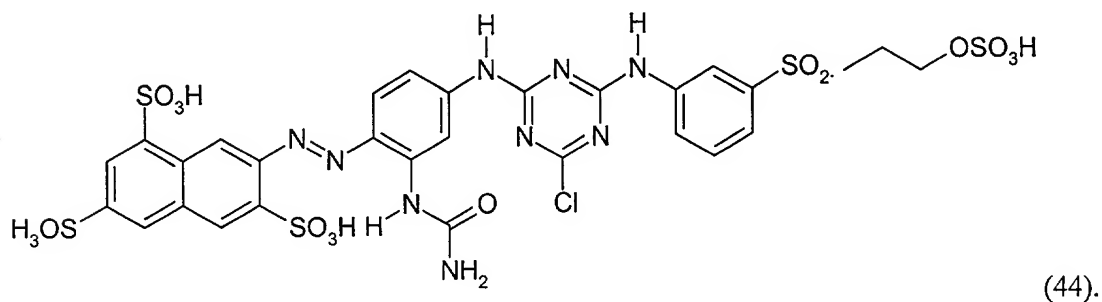
150. The dye mixture according to claim 149, wherein the group  $\text{Het}^3$  is a vinylsulphonyl group or  $\text{SO}_2\text{CH}_2\text{CH}_2\text{Q}^1$ .

151. The dye mixture according to claim 150, wherein x is zero and  $\text{R}^1$  is a phenyl group substituted by a vinylsulphonyl group or  $\text{SO}_2\text{CH}_2\text{CH}_2\text{Q}^1$ .

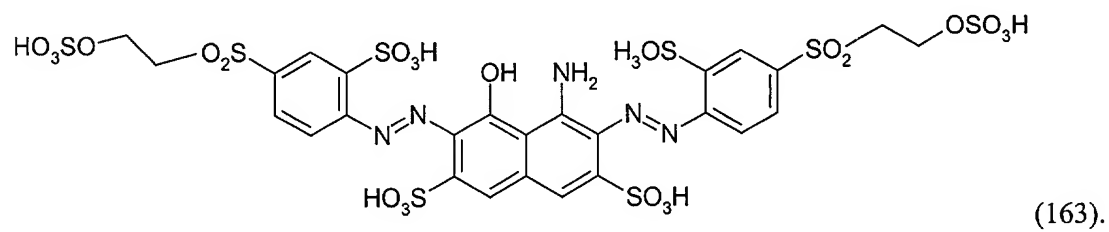
152. The dye mixture according to claim 137, which contains a dye of the formula (105)



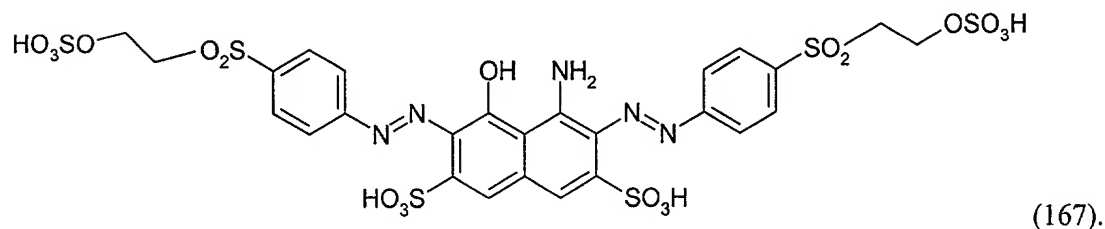
153. The dye mixture according to claim 152, which additionally contains a dye of the formula (44)



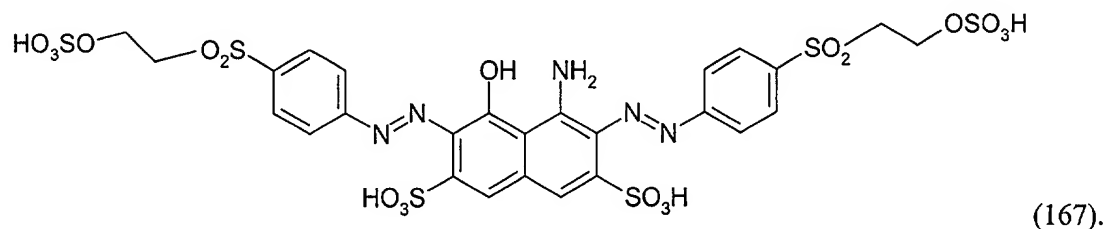
154. The dye mixture according to claim 137, which contains a dye of the formula (163)



155. The dye mixture according to claim 137, which contains a dye of the formula (167)



156. The dye mixture according to claim 154, which contains each of the dyes of the formulae (163) and (167).



157. The dye mixture according to claim 89, wherein the reactive dye (B) is a formazan dye of the formula (VI).

158. The dye mixture according to claim 157, wherein, in the reactive dye (B) of the formula (VI), each of u and v is zero, i is 1, R<sup>16</sup> is a sulphonic acid group or a salt thereof, j is 2 and one R<sup>17</sup> is a sulphonic acid group or a salt thereof and the other R<sup>17</sup> is a vinylsulphonyl group or SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Q<sup>1</sup>.

159. The dye mixture according to claim 157, wherein, in the reactive dye (B) of the formula (VI), v is zero, i is 1, R<sup>16</sup> is a sulphonic acid group or a salt thereof, j is 1, R<sup>17</sup> is a sulphonic acid group, u is 1 and Het<sup>1</sup> is a triazine ring substituted by a halogen atom.

160. The dye mixture according to claim 159, wherein each of k and l is zero, t is 1 and R<sup>61</sup> is a phenyl group substituted by at least one sulphonic acid group or a salt thereof.

161. The dye mixture according to claim 159, wherein each of k, l and t is 1, each of R<sup>60</sup> and R<sup>61</sup> independently is a phenyl group substituted by at least one sulphonic acid group or a salt thereof and Het<sup>2</sup> is a triazine ring substituted by a halogen atom.

162. The dye mixture according to claim 159, wherein each of k and t is zero, l is 1 and Het<sup>2</sup> is a reactive group having an aliphatic chain.

163. The dye mixture according to 89, wherein the reactive dye (B) is a disazo dye of the formula (VIII).

164. The dye mixture according to claim 163, wherein

R<sup>55</sup> is a naphthyl group;

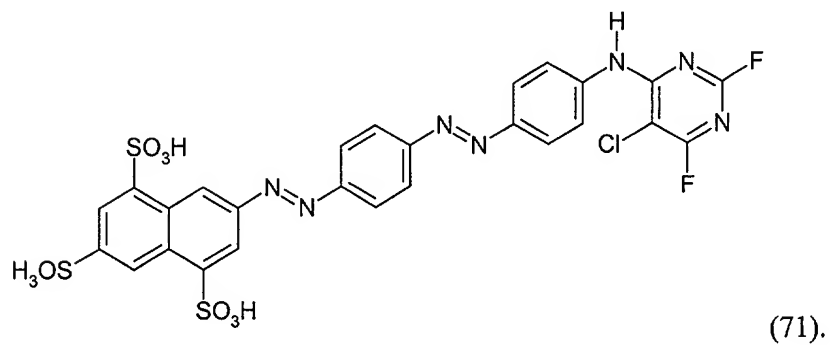
R<sup>56</sup> is a sulphonic acid group or a salt thereof;

R<sup>59</sup> is a group L<sup>10</sup>-Het, wherein L<sup>10</sup> is the group N(H)- and Het is a reactive heterocyclic group substituted by at least one halogen atom;

y<sub>1</sub> is 1, 2 or 3; and

each of  $y_2$ ,  $y_3$  and  $y_4$  is zero.

165. A dye mixture according to claim 76, which contains a dye of the formula (71)



166. The dye mixture according to claim 163, wherein

$R^{55}$  is a phenyl group;

the group  $R^{56}$  or each group  $R^{56}$  independently is a sulphonic acid group or a salt thereof or is a reactive group selected from a vinyl sulphonyl group and a group  $SO_2CH_2CH_2Q^2$ ;

$y_1$  is 1 or 2; and

at least one group  $R^{56}$  is a said reactive group or the group  $R^{59}$  is or includes a reactive group.

167. The dye mixture according to claim 166, wherein at least one

group  $R^{56}$  or the group  $R^{59}$  is a reactive group selected from a vinyl sulphonyl group and a group  $SO_2CH_2CH_2Q^2$ .

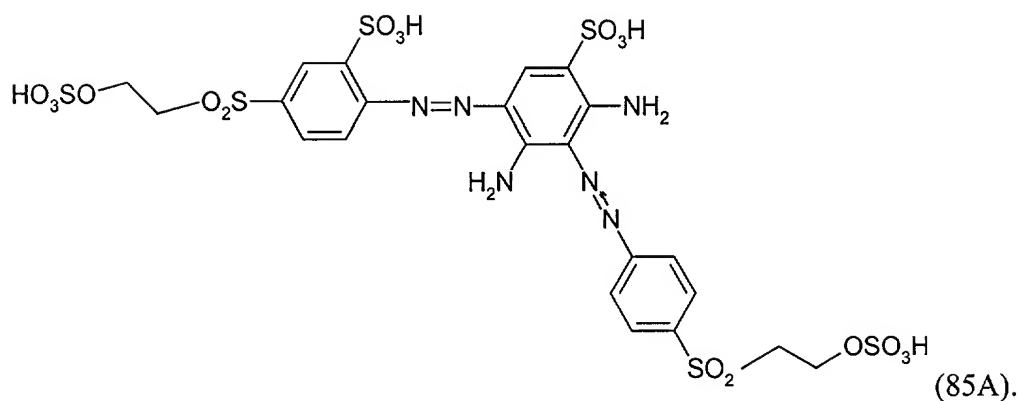
168. The dye mixture according to claim 166, wherein at least one

group  $R^{56}$  is a sulphonic acid group or a salt thereof and  $R^{59}$  is the group  $L^{10}$ -Het, where  $L^{10}$  is the group N(H)- and Het is a reactive triazine group substituted by a halogen atom and additionally, by the group  $NHCH_2CH_2SO_3H$ .

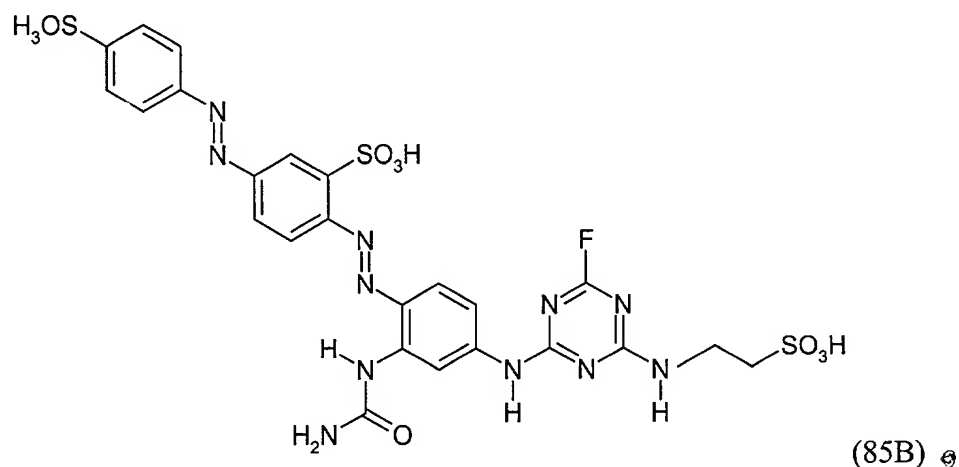
169. The dye mixture according to claim 167, which contains a

disazo dye of the formula (85A)





170. The dye mixture according to claim 167, which contains a disazo dye of the formula (85B)



171. The dye mixture according to claim 89, wherein the reactive dye (B) is a phthalocyanine dye of the formula (X).

172. The dye mixture according to claim 173, wherein, in the reactive dye (B) of the formula (X), respective average values of  $x_1$ ,  $x_2$  and  $x_3$  are  $x_1$  is 3,  $x_2$  is zero and  $x_3$  is 1, three of the four isoindole rings of the phthalocyanine have a respective sulphonic acid substituent or a salt thereof thereon and the other isoindole ring has a group  $\text{SO}_2\text{NH-B-NH-Het}$  substituted thereon.

173. The dye mixture according to claim 172, wherein B is a straight or branched C<sub>2-4</sub> alkylene group and Het is a triazine ring substituted by at least one halogen atom and optionally additionally substituted by a methoxy group.

174. The dye mixture according to claim 89, wherein the reactive dye (B) is a triphendioxazine dye of the formula (XI), or a salt thereof.

175. The dye mixture according to claim 174, wherein, in the reactive dye (B) of the formula (XI), each of T<sup>1</sup> and T<sup>2</sup> is a halogen atom, each U<sup>1</sup> is a sulphonic acid group or a salt thereof, each of B<sup>1</sup> and B<sup>2</sup> independently is a straight or branched C<sub>2-4</sub> alkylene group, each of Het<sup>1</sup> and Het<sup>2</sup> independently is a triazine ring substituted by a halogen atom and each of R<sup>80</sup> and R<sup>81</sup> independently is a phenyl group substituted by at least one sulphonic acid group or a salt thereof.

176. The dye mixture according to claim 89, comprising, by weight of the total weight of the dyes, from 10 to 99.5% by weight, inclusive of component (A), and from 0.5 to 90% by weight, inclusive of component (B).- -

#### REMARKS

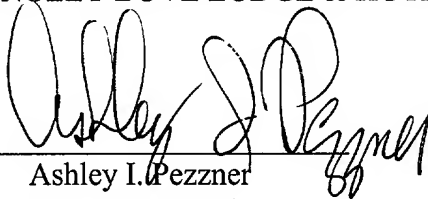
The applicants respectfully request that the preliminary amendment be entered prior to fee calculation and examination. The applicants have rewritten the claims 1-88 in the proper U.S. form as newly added claims 89-176. The application contains 1 independent claim (claim 89) and contains a total of 88 claims. The fee of \$1,224.00 is enclosed for the 68 additional claims over 20. No additional fee is due. If there are any additional fees due in connection with the filing of this response, including any fees required for an additional extension of time under

37 CFR 1.136, such an extension is requested and the Commissioner is authorized to charge or credit any overpayment to Deposit Account No. 03-2775.

A prompt and favorable action is solicited.

Respectfully submitted,

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